SEQUENCE LISTING



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<110> Cheever, Martin A.
      -Gheysen, Dirk
      Corixa Corporation
      SmithKline Beecham Biologicals S. A.
<120> HER-2/neu Fusion Proteins
<130> 014058-009810PC
<140> US 09/493,480
<141> 2000-01-28
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Pro Pro Gly Ala Ala Ser Thr Gln Val Cys Thr Gly Thr Asp Met Lys

20

3.0

Leu Tyr Gln Gly Cys Gln Val Val Gln Gly Asn Leu Glu Leu Thr Tyr Leu Pro Thr Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile Gln Glu Val Gln Gly Tyr Val Leu Ile Ala His Asn Gln Val Arg Gln Val Pro Leu Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp Asn Tyr 105 Ala Leu Ala Val Leu Asp Asn Gly Asp Pro Leu Asn Asn Thr Thr Pro Val Thr Gly Ala Ser Pro Gly Gly Leu Arg Glu Leu Gln Leu Arg Ser Leu Thr Glu Ile Leu Lys Gly Gly Val Leu Ile Gln Arg Asn Pro Gln Leu Cys Tyr Gln Asp Thr Ile Leu Trp Lys Asp Ile Phe His Lys Asn 170 Asn Gln Leu Ala Leu Thr Leu Ile Asp Thr Asn Arg Ser Arg Ala Cys His Pro Cys Ser Pro Met Cys Lys Gly Ser Arg Cys Trp Gly Glu Ser 200 Ser Glu Asp Cys Gln Ser Leu Thr Arg Thr Val Cys Ala Gly Gly Cys 210 215 Ala Arg Cys Lys Gly Pro Leu Pro Thr Asp Cys Cys His Glu Gln Cys Ala Ala Gly Cys Thr Gly Pro Lys His Ser Asp Cys Leu Ala Cys Leu His Phe Asn His Ser Gly Ile Cys Glu Leu His Cys Pro Ala Leu Val Thr Tyr Asn Thr Asp Thr Phe Glu Ser Met Pro Asn Pro Glu Gly Arg Tyr Thr Phe Gly Ala Ser Cys Val Thr Ala Cys Pro Tyr Asn Tyr Leu Ser Thr Asp Val Gly Ser Cys Thr Leu Val Cys Pro Leu His Asn Gln 315 Glu Val Thr Ala Glu Asp Gly Thr Gln Arg Cys Glu Lys Cys Ser Lys Pro Cys Ala Arg Val Cys Tyr Gly Leu Gly Met Glu His Leu Arg Glu 345 Val Arg Ala Val Thr Ser Ala Asn Ile Gln Glu Phe Ala Gly Cys Lys 360

Lys	Ile 370	Phe	Gly	Ser	Leu	Ala 375	Phe	Leu	Pro	Glu	Ser 380	Phe	Asp	Gly	Asp
Pro 385	Ala	Ser	Asn	Thr	Ala 390	Pro	Leu	Gln	Pro	Glu 395	Gln	Leu	Gln	Val	Phe 400
Glu	Thr	Leu	Glu	Glu 405	Ile	Thr	Gly	Tyr	Leu 410	Tyr	Ile	Ser	Ala	Trp 415	Pro
Asp	Ser	Leu	Pro 420	Asp	Leu	Ser	Val	Phe 425	Gln	Asn	Leu	Gln	Val 430	Ile	Arg
Gly	Arg	Ile 435	Leu	His	Asn	Gly	Ala 440	Tyr	Ser	Leu	Thr	Leu 445	Gln	Gly	Leu
Gly	Ile 450	Ser	Trp	Leu	Gly	Leu 455	Arg	Ser	Leu	Arg	Glu 460	Leu	Gly	Ser	Gly
Leu 465	Ala	Leu	Ile	His	His 470	Asn	Thr	His	Leu	Cys 475	Phe	Val	His	Thr	Val 480
Pro	Trp	Asp	Gln	Leu 485	Phe	Arg	Asn	Pro	His 490	Gln	Ala	Leu	Leu	His 495	Thr
Ala	Asn	Arg	Pro 500	Glu	Asp	Glu	Cys	Val 505	Gly	Glu	Gly	Leu	Ala 510	Cys	His
Gln	Leu	Cys 515	Ala	Arg	Gly	His	Cys 520	Trp	Gly	Pro	Gly	Pro 525	Thr	Gln	Cys
Val	Asn 530	Cys	Ser	Gln	Phe	Leu 535	Arg	Gly	Gln	Glu	Cys 540	Val	Glu	Glu	Cys
Arg 545	Val	Leu	Gln	Gly	Leu 550	Pro	Arg	Glu	Tyr	Val 555	Asn	Ala	Arg	His	Cys 560
Leu	Pro	Cys	His	Pro 565	Glu	Cys	Gln	Pro	Gln 570	Asn	Gly	Ser	Val	Thr 575	Cys
Phe	Gly	Pro	Glu 580	Ala	Asp	Gln	Cys	Val 585	Ala	Cys	Ala	His	Tyr 590	Lys	Asp
Pro	Pro	Phe 595	Cys	Val	Ala	Arg	Cys 600	Pro	Ser	Gly	Val	Lys 605	Pro	Asp	Leu
Ser	Tyr 610	Met	Pro	Ile	Trp	Lys 615		Pro	Asp	Glu	Glu 620	Gly	Ala	Cys	Gln
Pro 625	Cys	Pro	Ile	Asn	Cys 630	Thr	His	Ser	Cys	Val 635	Asp	Leu	Asp	Asp	Lys 640
Gly	Cvc	Pro	Ala	Glu	Gln	Arg	Ala	Ser		Leu	Thr	Ser	Ile	Ile	Ser
	СуБ			645					650					655	
Ala	_	Val		645	Leu	Leu	Val	Val 665		Leu	Gly	Val	Val 670		Gly

Arg	Leu 690	Leu	Gln	Glu	Thr	Glu 695	Leu	Val	Glu	Pŗo	Leu 700	Thr	Pro	Ser	Gly
Ala 705	Met	Pro	Asn	Gln	Ala 710	Gln	Met	Arg	Ile	Leu 715	Lys	Glu	Thr	Glu	Leu 720
Arg	Lys	Val	Lys	Val 725	Leu	Gly	Ser	Gly	Ala 730	Phe	Gly	Thr	Val	Tyr 735	Lys
Gly	Ile	Trp	Ile 740	Pro	Asp	Gly	Glu	Asn 745	Val	Lys	Ile	Pro	Val 750	Ala	Ile
Lys	Val	Leu 755	Arg	Glu	Asn	Thr	Ser 760	Pro	Lys	Ala	Asn	Lys 765	Glu	Ile	Leu
Asp	Glu 770	Ala	Tyr	Val	Met	Ala 775	Gly	Val	Gly	Ser	Pro 780	Tyr	Val	Ser	Arg
Leu 785	Leu	Gly	Ile	Cys	Leu 790	Thr	Ser	Thr	Val	Gln 795	Leu	Val	Thr	Gln	Leu 800
Met	Pro	Tyr	Gly	Cys 805	Leu	Leu	Asp	His	Val 810	Arg	Glu	Asn	Arg	Gly 815	Arg
Leu	Gly	Ser	Gln 820	Asp	Leu	Leu	Asn	Trp 825	Cys	Met	Gln	Ile	Ala 830	Lys	Gly
Met	Ser	Tyr 835	Leu	Glu	Asp	Val	Arg 840	Leu	Val	His	Arg	Asp 845	Leu	Ala	Ala
Arg	Asn 850	Val	Leu	Val	Lys	Ser 855	Pro	Asn	His	Val	Lys 860	Ile	Thr	Asp	Phe
Gly 865	Leu	Ala	Arg	Leu	Leu 870	Asp	Ile	Asp	Glu	Thr 875	Glu	Tyr	His	Ala	Asp 880
Gly	Gly	Lys	Val	Pro 885	Ile	Lys	Trp	Met	Ala 890	Leu	Glu	Ser	Ile	Leu 895	Arg
Arg	Arg	Phe	Thr 900	His	Gln	Ser	Asp	Val 905	Trp	Ser	Tyr	Gly	Val 910	Thr	Val
Trp	Glu	Leu 915	Met	Thr	Phe	Gly	Ala 920	Lys	Pro	Tyr	Asp	Gly 925	Ile	Pro	Ala
Arg	Glu 930	Ile	Pro	Asp	Leu	Leu 935	Glu	Lys	Gly	Glu	Arg 940	Leu	Pro	Gln	Pro
Pro 945	Ile	Cys	Thr	Ile	Asp 950	Val	Tyr	Met	Ile	Met 955	Val	Lys	Сув	Trp	Met 960
Ile	Asp	Ser	Glu	Сув 965	Arg	Pro	Arg	Phe	Arg 970	Glu	Leu	Val	Ser	Glu 975	Phe
Ser	Arg	Met	Ala 980	Arg	Asp	Pro	Gln	Arg 985	Phe	Val	Val		Gln 990	Asn	Glu
Asp	Leu	Gly 995	Pro	Ala	Ser		Leu L000	Asp	Ser	Thr		Tyr L005	Arg	Ser	Leu

Leu Glu Asp Asp Met Gly Asp Leu Val Asp Ala Glu Glu Tyr Leu 1010 1015 1020

Val Pro Gln Gln Gly Phe Phe Cys Pro Asp Pro Ala Pro Gly Ala Gly 1025 1030 1035 1040

Gly Met Val His His Arg His Arg Ser Ser Ser Thr Arg Ser Gly Gly
1045 1050 1055

Gly Asp Leu Thr Leu Gly Leu Glu Pro Ser Glu Glu Glu Ala Pro Arg
1060 1065 1070

Ser Pro Leu Ala Pro Ser Glu Gly Ala Gly Ser Asp Val Phe Asp Gly 1075 1080 1085

Asp Leu Gly Met Gly Ala Ala Lys Gly Leu Gln Ser Leu Pro Thr His 1090 1095 1100

Asp Pro Ser Pro Leu Gln Arg Tyr Ser Glu Asp Pro Thr Val Pro Leu 1105 1110 1115 1120

Pro Ser Glu Thr Asp Gly Tyr Val Ala Pro Leu Thr Cys Ser Pro Gln 1125 1130 1135

Pro Glu Tyr Val Asn Gln Pro Asp Val Arg Pro Gln Pro Pro Ser Pro 1140 1145 1150

Arg Glu Gly Pro Leu Pro Ala Ala Arg Pro Ala Gly Ala Thr Leu Glu 1155 1160 1165

Arg Pro Lys Thr Leu Ser Pro Gly Lys Asn Gly Val Val Lys Asp Val 1170 1175 1180

Phe Ala Phe Gly Gly Ala Val Glu Asn Pro Glu Tyr Leu Thr Pro Gln 1185 1190 1195 1200

Gly Gly Ala Ala Pro Gln Pro His Pro Pro Pro Ala Phe Ser Pro Ala 1205 1210 1215

Phe Asp Asn Leu Tyr Tyr Trp Asp Gln Asp Pro Pro Glu Arg Gly Ala 1220 1225 1230

Pro Pro Ser Thr Phe Lys Gly Thr Pro Thr Ala Glu Asn Pro Glu Tyr 1235 1240 1245

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Cys	Ala	Ala	Gly	Cys 245	Thr	Gly	Pro	Lys	His 250	Ser	Asp	Cys	Leu	Ala 255	Cys
Leu	His	Phe	Asn 260	His	Ser	Gly	Ile	Cys 265	Glu	Leu	His	Cys	Pro 270	Ala	Leu
Val	Thr	Tyr 275	Asn	Thr	Asp	Thr	Phe 280	Glu	Ser	Met	His	Asn 285	Pro	Glu	Gly
Arg	Tyr 290	Thr	Phe	Gly	Ala	Ser 295	Cys	Val	Thr	Thr	Cys 300	Pro	Tyr	Asn	Tyr
Leu 305	Ser	Thr	Glu	Val	Gly 310	Ser	Cys	Thr	Leu	Val 315	Cys	Pro	Pro	Asn	Asn 320
Gln	Glu	Val	Thr	Ala 325	Glu	Asp	Gly	Thr	Gln 330	Arg	Cys	Glu	Lys	Cys 335	Ser
Lys	Pro	Cys	Ala 340	Arg	Val	Cys	Tyr	Gly 345	Leu	Gly	Met	Glu	His 350	Leu	Arg
Gly	Ala	Arg 355	Ala	Ile	Thr	Ser	Asp 360	Asn	Val	Gln	Glu	Phe 365	Asp	Gly	Cys
Lys	Lys 370	Ile	Phe	Gly	Ser	Leu 375	Ala	Phe	Leu	Pro	Glu 380	Ser	Phe	Asp	Gly
Asp 385	Pro	Ser	Ser	Gly	Ile 390	Ala	Pro	Leu	Arg	Pro 395	Glu	Gln	Leu	Gln	Val 400
Phe	Glu	Thr	Leu	Glu 405	Glu	Ile	Thr	Gly	Tyr 410	Leu	Tyr	Ile	Ser	Ala 415	Trp
Pro	Asp		Leu 420	_	_		Ser						Arg 430		Ile
Arg	Gly	Arg 435	Ile	Leu	His	Asp	Gly 440	Ala	Tyr	Ser	Leu	Thr 445	Leu	Gln	Gly
Leu	Gly 450	Ile	His	Ser	Leu	Gly 455	Leu	Arg	Ser	Leu	Arg 460	Glu	Leu	Gly	Ser
Gly 465	Leu	Ala	Leu	Ile	His 470	Arg	Asn	Ala	His	Leu 475	Cys	Phe	Val	His	Thr 480
Val	Pro	Trp	Asp	Gln 485	Leu	Phe	Arg	Asn	Pro 490	His	Gln	Ala	Leu	Leu 495	His
Ser	Gly	Asn	Arg 500	Pro	Glu	Glu	Asp	Cys 505	Gly	Leu	Glu	Gly	Leu 510	Val	Cys
Asn	Ser	Leu 515	Cys	Ala	His	Gly	His 520	Cys	Trp	Gly	Pro	Gly 525	Pro	Thr	Gln

Cys Val Asn Cys Ser His Phe Leu Arg Gly Gln Glu Cys Val Glu Glu 535 Cys Arg Val Trp Lys Gly Leu Pro Arg Glu Tyr Val Ser Asp Lys Arg Cys Leu Pro Cys His Pro Glu Cys Gln Pro Gln Asn Ser Ser Glu Thr Cys Phe Gly Ser Glu Ala Asp Gln Cys Ala Ala Cys Ala His Tyr Lys Asp Ser Ser Ser Cys Val Ala Arg Cys Pro Ser Gly Val Lys Pro Asp Leu Ser Tyr Met Pro Ile Trp Lys Tyr Pro Asp Glu Glu Gly Ile Cys 615 Gln Pro Cys Pro Ile Asn Cys Thr His Ser Cys Val Asp Leu Asp Glu Arg Gly Cys Pro Ala Glu Gln Arg Ala Ser Pro Val Thr Phe Ile Ile Ala Thr Val Glu Gly Val Leu Leu Phe Leu Ile Leu Val Val Val Val Gly Ile Leu Ile Lys Arg Arg Gln Lys Ile Arg Lys Tyr Thr Met 680 Arg Arg Leu Leu Gln Glu Thr Glu Leu Val Glu Pro Leu Thr Pro Ser 700 Gly Ala Met Pro Asn Gln Ala Gln Met Arg Ile Leu Lys Glu Thr Glu 710 Leu Arg Lys Val Lys Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr 725 730 Lys Gly Ile Trp Ile Pro Asp Gly Glu Asn Val Lys Ile Pro Val Ala 745 Ile Lys Val Leu Arg Glu Asn Thr Ser Pro Lys Ala Asn Lys Glu Ile 760 Leu Asp Glu Ala Tyr Val Met Ala Gly Val Gly Ser Pro Tyr Val Ser Arg Leu Leu Gly Ile Cys Leu Thr Ser Thr Val Gln Leu Val Thr Gln 795 Leu Met Pro Tyr Gly Cys Leu Leu Asp His Val Arg Glu His Arg Gly Arg Leu Gly Ser Gln Asp Leu Leu Asn Trp Cys Val Gln Ile Ala Lys 825 Gly Met Ser Tyr Leu Glu Asp Val Arg Leu Val His Arg Asp Leu Ala 840

- Ala Arg Asn Val Leu Val Lys Ser Pro Asn His Val Lys Ile Thr Asp 850 860
- Phe Gly Leu Ala Arg Leu Leu Asp Ile Asp Glu Thr Glu Tyr His Ala 865 870 875 880
- Asp Gly Gly Lys Val Pro Ile Lys Trp Met Ala Leu Glu Ser Ile Leu 885 890 895
- Arg Arg Arg Phe Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr 900 905 910
- Val Trp Glu Leu Met Thr Phe Gly Ala Lys Pro Tyr Asp Gly Ile Pro 915 920 925
- Ala Arg Glu Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg Leu Pro Gln 930 935 940
- Pro Pro Ile Cys Thr Ile Asp Val Tyr Met Ile Met Val Lys Cys Trp 945 950 955 960
- Met Ile Asp Ser Glu Cys Arg Pro Arg Phe Arg Glu Leu Val Ser Glu 965 970 975
- Phe Ser Arg Met Ala Arg Asp Pro Gln Arg Phe Val Val Ile Gln Asn 980 985 990
- Glu Asp Leu Gly Pro Ser Ser Pro Met Asp Ser Thr Phe Tyr Arg Ser 995 1000 1005
- Leu Leu Glu Asp Asp Asp Met Gly Asp Leu Val Asp Ala Glu Glu Tyr 1010 1015 1020
- Leu Val Pro Gln Gln Gly Phe Phe Ser Pro Asp Pro Thr Pro Gly Thr 1025 1030 1035 1040
- Gly Ser Thr Ala His Arg Arg His Arg Ser Ser Ser Thr Arg Ser Gly 1045 1050 1055
- Gly Glu Leu Thr Leu Gly Leu Glu Pro Ser Glu Glu Gly Pro Pro 1060 1065 1070
- Arg Ser Pro Leu Ala Pro Ser Glu Gly Ala Gly Ser Asp Val Phe Asp 1075 1080 1085
- Gly Asp Leu Ala Met Gly Val Thr Lys Gly Leu Gln Ser Leu Ser Pro 1090 1095 1100
- His Asp Leu Ser Pro Leu Gln Arg Tyr Ser Glu Asp Pro Thr Leu Pro 1105 1110 1115 1120
- Leu Pro Pro Glu Thr Asp Gly Tyr Val Ala Pro Leu Ala Cys Ser Pro 1125 1130 1135
- Gln Pro Glu Tyr Val Asn Gln Ser Glu Val Gln Pro Gln Pro Leu 1140 1145 1150
- Thr Pro Glu Gly Pro Leu Pro Pro Val Arg Pro Ala Gly Ala Thr Leu 1155 1160 1165

Glu Arg Pro Lys Thr Leu Ser Pro Gly Lys Asn Gly Val Val Lys Asp 1170 1175 1180

Val Phe Ala Phe Gly Gly Ala Val Glu Asn Pro Glu Tyr Leu Val Pro 1185 1190 1195 1200

Arg Glu Gly Thr Ala Ser Pro Pro His Pro Ser Pro Ala Phe Ser Pro 1205 1210 1215

Ala Phe Asp Asn Leu Tyr Tyr Trp Asp Gln Asn Ser Ser Glu Gln Gly
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Pro Pro Pro Ser Asn Phe Glu Gly Thr Pro Thr Ala Glu Asn Pro Glu 1235 1240 1245

Tyr Leu Gly Leu Asp Val Pro Val 1250 1255

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<212> PRT

<213> Homo sapiens

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Pro Pro Gly Ala Ala Ser Thr Gln Val Cys Thr Gly Thr Asp Met Lys 20 25 30

Leu Arg Leu Pro Ala Ser Pro Glu Thr His Leu Asp Met Leu Arg His 35 40 45

Leu Tyr Gln Gly Cys Gln Val Val Gln Gly Asn Leu Glu Leu Thr Tyr 50 55 60

Leu Pro Thr Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile Gln Glu Val 65 70 75 80

Gln Gly Tyr Val Leu Ile Ala His Asn Gln Val Arg Gln Val Pro Leu 85 90 95

Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp Asn Tyr 100 105 110

Ala Leu Ala Val Leu Asp Asn Gly Asp Pro Leu Asn Asn Thr Thr Pro 115 120 125

Val Thr Gly Ala Ser Pro Gly Gly Leu Arg Glu Leu Gln Leu Arg Ser 130 135 140

Leu Thr Glu Ile Leu Lys Gly Gly Val Leu Ile Gln Arg Asn Pro Gln 145 150 155 160

Leu Cys Tyr Gln Asp Thr Ile Leu Trp Lys Asp Ile Phe His Lys Asn 165 170 175

Asn	Gln	Leu	Ala 180	Leu	Thr	Leu	Ile	Asp 185	Thr	Asn	Arg	Ser	Arg 190	Ala	Cys
His	Pro	Cys 195	Ser	Pro	Met	Cys	Lys 200	Gly	Ser	Arg	Cys	Trp 205	Gly	Glu	Ser
Ser	Glu 210	Asp	Cys	Gln	Ser	Leu 215	Thr	Arg	Thr	Val	Cys 220	Ala	Gly	Gly	Cys
Ala 225	Arg	Cys	Lys	Gly	Pro 230	Leu	Pro	Thr	Asp	Cys 235	Cys	His	Glu	Gln	Cys 240
Ala	Ala	Gly	Cys	Thr 245	Gly	Pro	Lys	His	Ser 250	Asp	Cys	Leu	Ala	Cys 255	Leu
His	Phe	Asn	His 260	Ser	Gly	Ile	Cys	Glu 265	Leu	His	Cys	Pro	Ala 270	Leu	Val
Thr	Tyr	Asn 275	Thr	Asp	Thr	Phe	Glu 280	Ser	Met	Pro	Asn	Pro 285	Glu	Gly	Arg
Tyr	Thr 290	Phe	Gly	Ala	Ser	Cys 295	Val	Thr	Ala	Cys	Pro 300	Tyr	Asn	Tyr	Leu
Ser 305	Thr	Asp	Val	Gly	Ser 310	Cys	Thr	Leu	Val	Cys 315	Pro	Leu	His	Asn	Gln 320
Glu	Val	Thr	Ala	Glu 325	Asp	Gly	Thr	Gln	Arg 330	Cys	Glu	Lys	Cys	Ser 335	Lys
Pro	Cys	Ala	Arg 340	Val	Cys	Tyr	Gly	Leu 345	Gly	Met	Glu	His	Leu 350	Arg	Glu
Val	Arg	Ala 355	Val	Thr	Ser	Ala	Asn 360	Ile	Gln	Glu	Phe	Ala 365	Gly	Cys	Lys
_															
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_	370					375					380			Gly Val	
Pro 385	370 Ala	Ser	Asn	Thr	Ala 390	375 Pro	Leu	Gln	Pro	Glu 395	380 Gln	Leu	Gln		Phe 400
Pro 385 Glu	370 Ala Thr	Ser Leu	Asn Glu	Thr Glu 405	Ala 390 Ile	375 Pro Thr	Leu Gly	Gln Tyr	Pro Leu 410	Glu 395 Tyr	380 Gln Ile	Leu Ser	Gln Ala	Val Trp	Phe 400 Pro
Pro 385 Glu Asp	370 Ala Thr Ser	Ser Leu Leu	Asn Glu Pro 420	Thr Glu 405 Asp	Ala 390 Ile Leu	375 Pro Thr	Leu Gly Val	Gln Tyr Phe 425	Pro Leu 410 Gln	Glu 395 Tyr Asn	380 Gln Ile Leu	Leu Ser Gln	Gln Ala Val 430	Val Trp 415	Phe 400 Pro
Pro 385 Glu Asp	370 Ala Thr Ser	Ser Leu Leu Ile 435	Asn Glu Pro 420 Leu	Thr Glu 405 Asp	Ala 390 Ile Leu Asn	375 Pro Thr Ser Gly	Leu Gly Val Ala 440	Gln Tyr Phe 425 Tyr	Pro Leu 410 Gln Ser	Glu 395 Tyr Asn Leu	380 Gln Ile Leu Thr	Leu Ser Gln Leu 445	Gln Ala Val 430 Gln	Val Trp 415 Ile Gly	Phe 400 Pro
Pro 385 Glu Asp Gly	370 Ala Thr Ser Arg	Ser Leu Leu Ile 435 Ser	Asn Glu Pro 420 Leu Trp	Thr Glu 405 Asp His	Ala 390 Ile Leu Asn	375 Pro Thr Ser Gly Leu 455	Leu Gly Val Ala 440 Arg	Gln Tyr Phe 425 Tyr	Pro Leu 410 Gln Ser Leu	Glu 395 Tyr Asn Leu Arg	380 Gln Ile Leu Thr Glu 460	Leu Ser Gln Leu 445 Leu	Gln Ala Val 430 Gln	Val Trp 415 Ile Gly	Phe 400 Pro Arg Leu

Ala Asn Arg Pro Glu Asp Glu Cys Val Gly Glu Gly Leu Ala Cys His 500 505 510

Gln Leu Cys Ala Arg Gly His Cys Trp Gly Pro Gly Pro Thr Gln Cys 515 520 525

Val Asn Cys Ser Gln Phe Leu Arg Gly Gln Glu Cys Val Glu Glu Cys 530 535 540

Arg Val Leu Gln Gly Leu Pro Arg Glu Tyr Val Asn Ala Arg His Cys 545 550 555 560

Leu Pro Cys His Pro Glu Cys Gln Pro Gln Asn Gly Ser Val Thr Cys 565 570 575

Phe Gly Pro Glu Ala Asp Gln Cys Val Ala Cys Ala His Tyr Lys Asp 580 585 590

Pro Pro Phe Cys Val Ala Arg Cys Pro Ser Gly Val Lys Pro Asp Leu 595 600 605

Ser Tyr Met Pro Ile Trp Lys Phe Pro Asp Glu Glu Gly Ala Cys Gln 610 615 620

Pro Cys Pro Ile Asn Cys Thr His Ser Cys Val Asp Leu Asp Asp Lys 625 630 635 640

Gly Cys Pro Ala Glu Gln Arg Ala Ser Pro Leu Thr Ser 645 650

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<212> PRT

<213> Homo sapiens

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<223> phosphorylation domain (PD) of human HER-2/neu

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Gln Asn Glu Asp Leu Gly Pro Ala Ser Pro Leu Asp Ser Thr Phe Tyr
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Arg Ser Leu Leu Glu Asp Asp Asp Met Gly Asp Leu Val Asp Ala Glu 20 25 30

Glu Tyr Leu Val Pro Gln Gln Gly Phe Phe Cys Pro Asp Pro Ala Pro 35 40 45

Gly Ala Gly Gly Met Val His His Arg His Arg Ser Ser Ser Thr Arg
50 60

Ser Gly Gly Gly Asp Leu Thr Leu Gly Leu Glu Pro Ser Glu Glu Glu 65 70 75 80

Ala Pro Arg Ser Pro Leu Ala Pro Ser Glu Gly Ala Gly Ser Asp Val 85 90 95

Phe Asp Gly Asp Leu Gly Met Gly Ala Ala Lys Gly Leu Gln Ser Leu 100 105 110

Pro Thr His Asp Pro Ser Pro Leu Gln Arg Tyr Ser Glu Asp Pro Thr
115 120 125

Val Pro Leu Pro Ser Glu Thr Asp Gly Tyr Val Ala Pro Leu Thr Cys 130 135 140

Ser Pro Gln Pro Glu Tyr Val Asn Gln Pro Asp Val Arg Pro Gln Pro 145 150 155 160

Pro Ser Pro Arg Glu Gly Pro Leu Pro Ala Ala Arg Pro Ala Gly Ala 165 170 175

Thr Leu Glu Arg Pro Lys Thr Leu Ser Pro Gly Lys Asn Gly Val Val
180 185 190

Lys Asp Val Phe Ala Phe Gly Gly Ala Val Glu Asn Pro Glu Tyr Leu 195 200 205

Thr Pro Gln Gly Gly Ala Ala Pro Gln Pro His Pro Pro Pro Ala Phe 210 215 220

Ser Pro Ala Phe Asp Asn Leu Tyr Tyr Trp Asp Gln Asp Pro Pro Glu 225 230 235 240

Arg Gly Ala Pro Pro Ser Thr Phe Lys Gly Thr Pro Thr Ala Glu Asn 245 250 255

Pro Glu Tyr Leu Gly Leu Asp Val Pro Val 260 265

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<211> 59

<212> PRT

<213> Homo sapiens

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Arg Ser Leu Leu Glu Asp Asp Met Gly Asp Leu Val Asp Ala Glu
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Glu Tyr Leu Val Pro Gln Gln Gly Phe Phe Cys Pro Asp Pro Ala Pro 35 40 45

Gly Ala Gly Gly Met Val His His Arg His Arg 50 55

<210> 6

<211> 919

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence:fusion protein
 of ECD and PD of human HER-2/neu

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Pro Pro Gly Ala Ala Ser Thr Gln Val Cys Thr Gly Thr Asp Met Lys
20 25 30

Leu Arg Leu Pro Ala Ser Pro Glu Thr His Leu Asp Met Leu Arg His 35 40 45

Leu Tyr Gln Gly Cys Gln Val Val Gln Gly Asn Leu Glu Leu Thr Tyr
50 55 60

Leu Pro Thr Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile Gln Glu Val 65 70 75 80

Gln Gly Tyr Val Leu Ile Ala His Asn Gln Val Arg Gln Val Pro Leu 85 90 95

Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp Asn Tyr 100 105 110

Ala Leu Ala Val Leu Asp Asn Gly Asp Pro Leu Asn Asn Thr Thr Pro 115 120 125

Val Thr Gly Ala Ser Pro Gly Gly Leu Arg Glu Leu Gln Leu Arg Ser 130 135 140

Leu Thr Glu Ile Leu Lys Gly Gly Val Leu Ile Gln Arg Asn Pro Gln 145 150 155 160

Leu Cys Tyr Gln Asp Thr Ile Leu Trp Lys Asp Ile Phe His Lys Asn 165 170 175

Asn Gln Leu Ala Leu Thr Leu Ile Asp Thr Asn Arg Ser Arg Ala Cys 180 185 190

His Pro Cys Ser Pro Met Cys Lys Gly Ser Arg Cys Trp Gly Glu Ser 195 200 205

Ser Glu Asp Cys Gln Ser Leu Thr Arg Thr Val Cys Ala Gly Gly Cys 210 215 220

Ala Arg Cys Lys Gly Pro Leu Pro Thr Asp Cys Cys His Glu Gln Cys 225 230 235 240

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His Phe Asn His Ser Gly Ile Cys Glu Leu His Cys Pro Ala Leu Val 260 265 270

Thr Tyr Asn Thr Asp Thr Phe Glu Ser Met Pro Asn Pro Glu Gly Arg
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Tyr Thr Phe Gly Ala Ser Cys Val Thr Ala Cys Pro Tyr Asn Tyr Leu 290 295 300

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Pro Pro	Phe Cys 595	Val Ala	Arg	Cys 600	Pro	Ser	Gly	Val	Lys 605	Pro	Asp	Leu
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Asp	Leu	Gly	Pro 660	Ala	Ser	Pro	Leu	Asp 665	Ser	Thr	Phe	Tyr	Arg 670	Ser	Leu
Leu	Glu	Asp 675	Asp	Asp	Met	Gly	Asp 680	Leu	Val	Asp	Ala	Glu 685	Glu	Tyr	Leu
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Ser	Pro	Leu	Ala 740	Pro	Ser	Glu	Gly	Ala 745	Gly	Ser	Asp	Val	Phe 750	Asp	Gly
Asp	Leu	Gly 755	Met	Gly	Ala	Ala	Lys 760	Gly	Leu	Gln	Ser	Leu 765	Pro	Thr	His
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Arg	Glu	Gly	Pro 820	Leu	Pro	Ala	Ala	Arg 825	Pro	Ala	Gly	Ala	Thr 830	Leu	Glu
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Gly 865	Gly	Ala	Ala	Pro	Gln 870	Pro	His	Pro	Pro	Pro 875	Ala	Phe	Ser	Pro	Ala 880
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Pro Cys Pro Ile Asn Cys Thr His Ser Cys Val Asp Leu Asp Asp Lys 625 630 635 640

Gly Cys Pro Ala Glu Gln Arg Ala Ser Pro Leu Thr Ser Gln Asn Glu 645 650 655

Asp Leu Gly Pro Ala Ser Pro Leu Asp Ser Thr Phe Tyr Arg Ser Leu 660 665 670

Leu Glu Asp Asp Met Gly Asp Leu Val Asp Ala Glu Glu Tyr Leu 675 680 685

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Val Pro Ala Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile Gln Glu Val 65 70 75 80

Gln Gly Tyr Met Leu Ile Ala His Asn Gln Val Lys Arg Val Pro Leu 85 90 95

Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp Lys Tyr 100 105 110

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Ser Thr Pro Gly Arg Thr Pro Glu Gly Leu Arg Glu Leu Gln Leu Arg 130 135 140

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Gly Leu Ala Leu Ile His Arg Asn Ala His Leu Cys Phe Val His Thr 470 475 Val Pro Trp Asp Gln Leu Phe Arg Asn Pro His Gln Ala Leu Leu His Ser Gly Asn Arg Pro Glu Glu Asp Cys Gly Leu Glu Gly Leu Val Cys Asn Ser Leu Cys Ala His Gly His Cys Trp Gly Pro Gly Pro Thr Gln 520 Cys Val Asn Cys Ser His Phe Leu Arg Gly Gln Glu Cys Val Glu Glu Cys Arg Val Trp Lys Gly Leu Pro Arg Glu Tyr Val Ser Asp Lys Arg 550 555 Cys Leu Pro Cys His Pro Glu Cys Gln Pro Gln Asn Ser Ser Glu Thr 570 Cys Phe Gly Ser Glu Ala Asp Gln Cys Ala Ala Cys Ala His Tyr Lys Asp Ser Ser Cys Val Ala Arg Cys Pro Ser Gly Val Lys Pro Asp Leu Ser Tyr Met Pro Ile Trp Lys Tyr Pro Asp Glu Glu Gly Ile Cys Gln Pro Cys Pro Ile Asn Cys Thr His Ser Cys Val Asp Leu Asp Glu 640 635 Arg Gly Cys Pro Ala Glu Gln Arg Ala Ser Pro Val Thr Phe 645 <210> 9 <211> 3768 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (1)..(3768) <223> human HER-2/neu protein <220> <221> misc_feature <222> (1)..(1959) <223> extracellular domain (ECD) of human HER-2/neu <220> <221> misc_feature

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Gly Asp Leu Ala Val Gly Val Thr Lys Gly Leu Gln Ser Leu Ser Pro 1090 1095 1100

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Thr Pro Glu Gly Pro Pro Pro Pro Ile Arg Pro Ala Gly Ala Thr Leu 1155 1160 1165

Glu Arg Pro Lys Thr Leu Ser Pro Gly Lys Asn Gly Val Val Lys Asp 1170 1175 1180

Val Phe Ala Phe Gly Gly Ala Val Glu Asn Pro Glu Tyr Leu Ala Pro 1185 1190 1195 1200

Arg Ala Gly Thr Ala Ser Gln Pro His Pro Ser Pro Ala Phe Ser Pro 1205 1210 1215

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